REVIEWS

Cladistics (1993) 9:437–442

BEYOND BINARY OPPOSITIONS

Fundamentos de Biogeografías Filogenéticas.—D. Espinosa and J. Llorente. 1993. Museo de Zoología, Facultad de Ciencias (UNAM) and Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO), México. 133 pp. Available from Jorge Llorente, Museo de Zoología, Facultad de Ciencias, UNAM, Apdo. Postal 70-399, Mexico, D. F. 04510. US $25.00 (+ US $3.00 for postage and shipping).

Léon Croizat (1958) subverted a long dispersalist tradition—rooted as far as the biblical account of the Garden of Eden—when he stated that "earth and life evolve together", and proposed panbiogeography. His ideas were initially ignored by the dispersalist establishment, until Donn Rosen, Gareth Nelson and Norman Platnick synthesized them with the cladistic approach of Willi Hennig (1966), and originated cladistic or vicariance biogeography. Some authors from New Zealand, however, considered the panbiogeographic approach as proposed by Croizat superior and formalized its procedures. Debate between proponents of both schools arose in the last few years, as part of the scientific revolution where the dispersalist paradigm will be replaced by some alternative, either panbiogeography or cladistic biogeography (Crisci and Morrone, 1992a). Books edited by Nelson and Rosen (1981), Craw and Sermonti (1988), Craw (1989) and Ladiges et al. (1991) are excellent collections of papers which reflect much of this exciting period. From this exuberant—sometimes cryptic—literature, Espinosa and Llorente have produced a valuable textbook, largely free from dogmatic unity. In seven clearly organized and copiously illustrated chapters, the authors produce more sense and meaning than has ever been previously done.

The introductory chapter presents useful discussions on the definition of biogeography and the distinction between its historical and ecological approaches. The "phylogenetic schools" dealing with the former, panbiogeography and cladistic biogeography, and the concept of biogeographic homology are discussed. The second chapter contains an interesting historical analysis. Michel Foucault's *Histoire de la Folie* introduced the term "archaeology" for the analyses where discontinuous "strata" are "excavated" and studied together. This approach is adopted by the authors who, instead of providing a classical interpretation where biogeography follows a progressive linear development, present an appropriate account of the more relevant facts that marked its history.

Chapter three deals with the general objectives and problems of comparative biology, the relation between pattern and process (in both systematics and biogeography) and the philosophical and methodological meaning of the parsimony criterion. Chapter four depicts a summary of cladistic methodology. After a brief presentation of the alternative taxonomic approaches, the general method is outlined. Basically, this chapter deals with characters, homology, homoplastic changes, natural and non-natural groups, cladograms, parsimony, indices and consensus trees.

Cladistic biogeographic principles and methods are dealt with in chapter five, which provides useful definitions and illustrations of areas of endemism, and particular and general-area cladograms. After discussing Rosen's reduced consensus

0748-3007/93/040437+06$08.00/0

© 1993 The Willi Hennig Society

10960031, 1993, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/j.1096-0031.1993.tb00237.x by CAPES, Wiley Online Library on [21/09/2023]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

cladogram and Wiley's ancestral species map method, the authors present Nelson and Platnick's component analysis and parsimony methods. Assumptions 0, 1 and 2, the comparison among cladograms, and consensus techniques are here discussed.

Chapter six basically deals with panbiogeographic key concepts, like individual and generalized tracks, baselines, nodes and main massings. It also presents the quantitative methods developed by Page (based on graph theory) and Craw (track compatibility).

The last chapter outlines two oppositions: "panbiogeography/cladistic biogeography" and "historical/ecological biogeography". While the former is dismissed, the latter is considered valid. In relation to the first opposition, I fully agree that both panbiogeography and cladistic biogeography can be synthesized into one historical biogeography (see Crisci and Morrone, 1992b). Barriers created in the past by polarizing both approaches are artificial, and their dissolution will probably allow us to focus more on real problems, leaving aside endless discussions. In relation to the opposition "historical/ecological biogeography", however, I do not share the authors' skepticism. I believe that moving beyond this binary opposition should be the next methodological step to be undertaken. In *Being and Time*, Martin Heidegger noted that tradition, while transmitting more and more knowledge, usually conceals truth, because it blocks access to the experiences in which truth originates. Perhaps this accumulation of knowledge is the problem with both biogeographic approaches. Why not radicalize Heidegger's challenge, deconstructing both "historical biogeography" and "ecological biogeography"? The possibility of their unification into a single "biogeography" seems to be an exciting prospect for a new book (and a new paradigm).—**Juan J. Morrone, Department of Entomology, American Museum of Natural History, New York, NY 10024, U.S.A.**

REFERENCES

CRAW, R. (ed.). 1989. Panbiogeography special issue. N. Z. J. Zool. 16(4): 471–806.

CRAW, R. AND G. SERMONTI (eds). 1988. Special issue on panbiogeography: Space–time–form. Riv. Biol.-Biol. Forum 81: 457–615.

CRISCI, J. V. AND J. J. MORRONE. 1992a. A comparison of biogeographic models: A response to Bastow Wilson. Global Ecol. Biogeog. Letters. 2: 174–176.

CRISCI, J. V. AND J. J. MORRONE. 1992b. Panbiogeografía y biogeografía cladística: Paradigmas actuales de la biogeografía histórica. Ciencias (México), nro. Especial 6: 87–97.

CROIZAT, L. 1958. Panbiogeography. Published by the author, Caracas.

HENNIG, W. 1966. Phylogenetic systematics. Univ. of Illinois Press, Urbana.

LADIGES, P. Y., C. J. HUMPHRIES AND L. W. MARTINELLI (eds). 1991. Austral biogeography. Austr. Syst. Bot. 4: 1–227.

NELSON, G. AND D. E. ROSEN (eds). 1981. Vicariance Biogeography: A Critique. Columbia Univ. Press, New York.

Biological Diversity of Mexico—Orgins and Distribution.—T. P. Ramamoorthy, R. Bye, A. Lot and J. Fa (eds). 1993. Oxford University Press. xxxix + 812 pages. $78.40 (cloth).

This volume is based upon a symposium on Mexico's biological diversity held in the city of Oaxtepec (state of Morelos), Mexico, in 1988. The original symposium was organized and partly funded by the Institute of Biology at Mexico's National

1096031, 1993, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/j.1096-0031.1993.tb00237.x by CAPES, Wiley Online Library on [21/09/2023]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License